

## Claims

- [c1] 1.A DC rotating electrical machine comprised of an outer housing forming a stator of said DC rotating electrical machine, said outer housing being comprised of a generally cylindrical center section and affixed first and second end closures, a rotor journaled within said outer housing and extending through said first end closures for driving connection to a related rotating machine, said first end closure forming a cavity in which a substantial portion of said related rotating machine is contained.
- [c2] 2.A DC rotating electrical machine as set forth in claim 1 wherein a third end closure is affixed in closing relation to the cavity of the first end closure for containing the related rotating machine within the cavity of said first end closure.
- [c3] 3.A DC rotating electrical machine as set forth in claim 1 wherein the first and second end closures are axially spaced from each other and the second end closure is integrally formed with an axially extending cylindrical center section.
- [c4] 4.A DC rotating electrical machine as set forth in claim 3 wherein the first end closure is in abutting relation to the axially extending cylindrical center section.
- [c5] 5.A DC rotating electrical machine as set forth in claim 3 wherein the first end closure is axially spaced from the axially extending cylindrical center section.
- Yab*  
*1A2* [c6] 6.A DC rotating electrical machine as set forth in claim 5 wherein the machine includes a stator made up a plurality of field coils.
- [c7] 7.A DC rotating electrical machine as set forth in claim 6 wherein the plurality of field coils are wound around a laminated core.
- [c8] 8.A DC rotating electrical machine as set forth in claim 7 wherein a portion of the laminated core is exposed between the first and second end closures.
- [c9] 9.A DC rotating electrical machine as set forth in claim 1 wherein the DC rotating electrical machine is brushless.

[c10] 10.A DC rotating electrical machine as set forth in claim 9 further including a sensor contained within the outer housing for sensing the rotational position of said rotor.

*10.10.13*  
[c11] 11.A DC rotating electrical machine as set forth in claim 10 wherein the machine includes a stator made up a plurality of field coils.

[c12] 12.A DC rotating electrical machine as set forth in claim 11 wherein a controller responsive to the output of the sensor switches the polarity of the field coils.

*10.10.14*  
[c13] 13.A DC rotating electrical machine as set forth in claim 12 wherein the controller is mounted in the interior of the machine.

[c14] 14.A DC rotating electrical machine as set forth in claim 13 wherein the controller is mounted axially between the first and second end closures.

*10.10.15*  
[c15] 15.A DC rotating electrical machine as set forth in claim 14 wherein the controller is mounted in a cylindrical member interposed between the first and second end closures.

*10.10.16*  
[c16] 16.A DC rotating electrical machine as set forth in claim 12 wherein the controller is mounted on the exterior of the machine.

*10.10.17*  
[c17] 17.A DC rotating electrical machine as set forth in claim 1 wherein the second end closure carries a cylindrical post extending into an cylindrical opening in the rotor for journaling said rotor within the outer housing.

[c18] 18.A DC rotating electrical machine as set forth in claim 17 wherein the cylindrical post extends a substantial distance axially into the rotor.

[c19] 19.A DC rotating electrical machine as set forth in claim 18 wherein the cylindrical post engages a bearing associated with the rotor.

[c20] 20.A DC rotating electrical machine as set forth in claim 19 wherein the bearing associated with the rotor comprises an oil impregnated, sleeve type bearing.

[c21] 21.A DC rotating electrical machine as set forth in claim 17 wherein the bearing

associated with the rotor comprises an anti friction bearing.

- [c22] 22.A DC rotating electrical machine as set forth in claim 17 wherein the cylindrical post is detachably connected to the second end closure.
- [c23] 23.A DC rotating electrical machine as set forth in claim 22 wherein the bearing associated with the rotor comprises an oil impregnated, sleeve type bearing.
- [c24] 24.A DC rotating electrical machine as set forth in claim 22 wherein the bearing associated with the rotor comprises an anti friction bearing.
- [c25] 25.A DC rotating electrical machine as set forth in claim 21 wherein the cylindrical post is integrally formed with the second end closure.
- 03/20/06*  
*Ab* [c26] 26.A DC rotating electrical machine as set forth in claim 1 in combination with a hydraulic powered steering booster and the DC rotating electrical machine comprises a motor and the associated machine is a hydraulic pump.
- [c27] 27.A DC rotating electrical machine comprised of an outer housing forming a stator of said DC rotating electrical machine, said outer housing being comprised of a generally cylindrical center section closed at opposite ends by first and second end closures, a rotor within said outer housing and extending through said first end closures for driving connection to a related rotating machine, said second end closure carrying a cylindrical post extending into an cylindrical opening in said rotor for journalling said rotor within said outer housing.
- [c28] 28.A DC rotating electrical machine as set forth in claim 27 wherein the cylindrical post extends a substantial distance axially into the rotor.
- [c29] 29.A DC rotating electrical machine as set forth in claim 28 wherein the cylindrical post engages a bearing associated with the rotor.
- [c30] 30.A DC rotating electrical machine as set forth in claim 29 wherein the bearing associated with the rotor comprises an oil impregnated, sleeve type bearing.
- [c31] 31.A DC rotating electrical machine as set forth in claim 29 wherein the bearing

associated with the rotor comprises an anti friction bearing.

- [c32] 32.A DC rotating electrical machine as set forth in claim 27 wherein the cylindrical post is detachably connected to the second end closure.
- [c33] 33.A DC rotating electrical machine as set forth in claim 32 wherein the bearing associated with the rotor comprises an oil impregnated, sleeve type bearing.
- [c34] 34.A DC rotating electrical machine as set forth in claim 32 wherein the bearing associated with the rotor comprises an anti friction bearing.
- [c35] 35.A DC rotating electrical machine as set forth in claim 27 wherein the cylindrical post is integrally formed with the second end closure.